EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 55107718
PUBLICATION DATE : 19-08-80

APPLICATION DATE : 14-02-79
APPLICATION NUMBER : 54015041

APPLICANT : NIPPON STEEL CORP;

INVENTOR : KATO IKU;

INT.CL. : C21C 7/10 C21C 1/00

TITLE : PRODUCTION OF MOLTEN STEEL

ABSTRACT : PURPOSE: To produce steel with less heat losses and superior productivity by desiliconizing, desulfurizing, dephosphorizing and decarbonizing molten iron in a vacuum degassing vessel then further deoxidating and dehydrogenating the same through vacuum degassing treatment.

CONSTITUTION: Molten iron is sucked up into a vacuum degassing vessel, where it is added with scale, iron ore, oxygen gas, etc. and is reciprocated between the pan and vacuum vessel to stir, whereby the Si contained therein is first oxidized and turned to slag. The SiO_2-base molten slag formed at this time is discharged to outside the pan. Next, desulfurizing and dephosphorizing flux of CaO-$CaCl_2$-CaF_2 base is added to the molten metal in the vacuum vessel and oxygen gas or scale is added, thence the molten iron is stirred in the same manner as above, whereby it is desulfurized and dephosphorized. Next, the slag formed is removed to prevent the occurrence of resulfurization and rephosphorization, after which new flux is added and oxygen gas and cooling material are suitably added to oxidation-decarbonize the C in the molten metal, whereby the molten iron is refined to steel. Finally, it is subjected to deoxidation and dehydrogenation by the vacuum degassing vessel, then to component-control with iron alloy, etc., whereby the steel of the target quality is produced.

COPYRIGHT: (C)1980,JPO&Japio